

Application Serial No. 10/576,006
Reply to office action of June 4, 2009

PATENT
Docket: CU-4773

REMARKS/ARGUMENTS

Reconsideration is respectfully requested.

Claims 1-4, 6, 7, 9 and 10 are pending before this amendment. By the present amendment, claim 1 is amended. No new matter has been added.

In the office action (page 3), claims 1-4, 6, 7, 9 and 10 stand rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 5,937,332 (Karabinis).

The applicants have amended claim 1 to clarify the presently claimed invention and to traverse the examiner's rejection.

The present invention relates to a mobile station for being able to receive a same **downlink** satellite signal before entering and after leaving a shadow area, where the **downlink** satellite signal cannot be directly transmitted to the mobile station when the mobile station is traveling through the shadow area. Further, the present invention discloses that the satellite signal the mobile station was receiving prior to entering the shadow station is the same satellite signal being amplified by a receiving unit (i.e., **downlink** signal from the same satellite). This amplified **downlink** signal from the satellite is transmitted through an electrically connected feeding line (wherein the amplified **downlink** signal through the feeding line cannot be blocked) to the radiating unit for being radiated to the mobile station as it travels in through the shadow area, wherein the radiating unit transmits with **only dual transmitting antennas**. Claim one have been amended to clarify these aspects of the present invention, where claim 1 now recites, inter alia:

—An apparatus for repeating a **downlink** signal from a satellite to a mobile station in a shadow area, the apparatus comprising:
a receiving unit for receiving the **downlink** signal and amplifying

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the received downlink signal from the satellite;
a radiating unit for radiating the amplified downlink signal to the shadow area; and
a feeding unit for feeding the amplified downlink signal to the radiating means,
wherein the radiating unit comprises:
a symmetrical dual transmitting antenna provided with a first microstrip patch array antenna and a second microstrip patch array antenna; and
a divider for dividing the amplified downlink signal to a first portion and a second portion, and passing the first portion to the first microstrip patch array antenna and the second portion to the second microstrip patch array antenna,
where the dual microstrip patch array antenna is used only as a transmitting antenna--.

Support for these limitations can be found at least in the specification at page 9, line 3 to page 10, line 2 and FIG. 9).

The Examiner states that Karabinis allegedly teaches dual transmitting antenna as shown in FIG. 3:210:185 and FIG. 3:290:175 and where the angle between two antennas are changed by in the mobile repeater (Karabinis FIG. 7).

However, nowhere in Karabinis teaches, discloses, or even suggests dual transmitting antennas transmitting a same downlink signal having a divider for dividing that divides this same downlink signal to an amplified downlink signal for being transmitted to a first portion and a second portion, and passing the first portion to the first microstrip patch array antenna and the second portion to the second microstrip patch array antenna, **where the dual microstrip patch array antenna is used only as a transmitting antenna.**

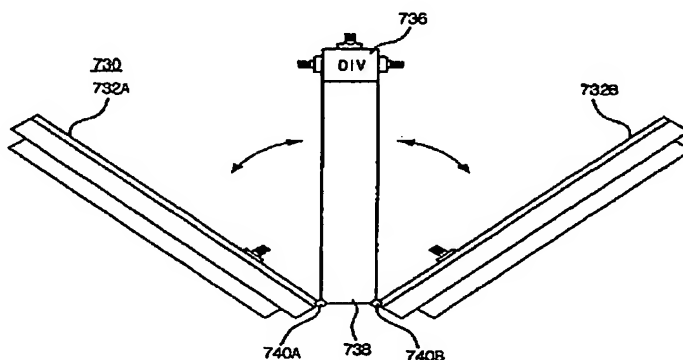
In contrast, Karabinis **only** discloses a satellite telecommunications repeater 200 that amplifies a downlink signal 170 and retransmits the signal to at least one radiotelephone 120. The repeater 200 includes a transmitting antenna and a receiving

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antenna suitable for use in communicating with the satellite. That is, Karabinis does **not** disclose dual transmitting antennas for transmitting a same **downlink** signal, where this same receive downlink signal has been divided and amplified to **only** transmitting antennas.

In contradistinction, FIG. 9, as shown below, of the present invention discloses dual directional microstrip patch array antenna 730 is used as a transmitting antenna only.



As shown above in Fig. 9, the dual directional microstrip patch array antenna 730 includes a first microstrip patch array antenna 732A, a second microstrip patch array antenna 732B, a divider 736 and a supporting member 738 provided with a pair of hinges 740A, 740B. A **downlink** received signal from the receiving block is divided by the divider 736 to a first **downlink** signal and a **downlink** second signal. The first **downlink** signal is radiated through the first microstrip patch array antenna 732A to a first direction and the second **downlink** signal is radiated through the second microstrip patch array antenna 732B to a second direction, which is opposite direction of the first direction. The first and the second microstrip patch array antennas 732A, 732B are rotatably connected to the supporting member 738. Both the first and the second

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microstrip patch array antennas 732A, 734B are only transmitting antennas and a radiating angles of the first and the second microstrip patch array antennas 732A, 732B are adjusted by tilting the first and the second microstrip patch array antennas 732A, 734B around the hinges 740A, 740B, respectively. Thus, the present invention is completely different from Karabinis.

Accordingly, the applicants respectfully submit that for these above reasons Karabinis does not teach, disclose or even suggest amended 1 of the present invention, because Karabinis can not adjust radiating angles of the first and the second microstrip patch array antennas by tilting two of transmitting antennas, which receives the same downlink signal that has been divided and amplified, respectively. Thus, the applicants respectfully submit that claim 1 is in condition for allowance over Karabinis.

As to claims 2-4, 6-7, and 9-10, the applicants respectfully submit that these claims are allowable at least since they depend from claim 1, which is now considered to be in condition for allowance for the reasons above.

For the reasons set forth above, the applicants respectfully submit that claims 1-4, 6-7, and 9-10, now pending in this application, are in condition for allowance over the cited references. Accordingly, the applicants respectfully request reconsideration and withdrawal of the outstanding rejections and earnestly solicit an indication of allowable subject matter.

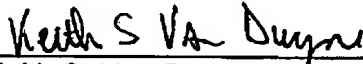
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This amendment is considered to be responsive to all points raised in the office action. Should the examiner have any remaining questions or concerns, the examiner is encouraged to contact the undersigned attorney by telephone to expeditiously resolve such concerns.

Respectfully submitted,

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